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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/698,659

10/31/2003

James A. Leistra

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EXAMINER

TSOY, ELENA

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

01/08/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/698,659

Applicant(s)

LEISTRA ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-40 is/are pending in the application.
- 4a) Of the above claim(s) 4, 13, 16-23, 28, 30-36, 39 and 40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-12, 14, 24-27, 29, 37 and 38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Request for Pre-Appeal Conference

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claims 1-14, 16-40 are pending in the application. Claims 4, 13, 16-23, 28, 30-36, and 39-40 are withdrawn from consideration as directed to a non-elected invention.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5-9, 11-12, 14, 24-27, 29, and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wessel et al (US 20030008196) in view of Cadaval Fernandez De Leceta et al (US 6685806).

Wessel et al are applied here for the same reasons as set forth in paragraph 2 of the Office Action mailed on 2/16/2007. Wessel et al teach that a current state of the art fuel cell has gas-permeable, porous electrodes, each comprising a *porous*, electrically conductive substrate 3 and an electrocatalytic layer 4 (See P26) comprising a standard catalyst (See P29). Wessel et al further teach that at least one additive such as deperoxidation-active compound and/or element (claimed peroxide decomposition catalyst) (See P27) may be provided in or on the electrode (See P13) by e.g. *impregnation* (See P28) in order to prevent the formation of peroxides and/or

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decomposition of peroxides (See P13). Preferably, the at least one additive is in the form of a ***coating on*** the electrodes 2 (claimed layer of peroxide decomposition catalyst) (See P30).

Wessel et al fail to teach that the additive coating layer has porosity of less than or equal to 20 % (Claims 1 and 25).

Cadaval Fernandez De Leceta et al teach that formation of an electrode layer with porosity that decreases in the direction of cation-exchange membrane (MEA) with a porosity gradient of 5-15% per 1 micron improves the electrochemical characteristics of MEA (See Abstract; column 6, lines 50-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed electrode of Wessel et al having coating of peroxide decomposition catalyst with porosity that decreases in the direction of cation-exchange membrane (MEA) with a porosity gradient of 5-15% per 1 micron with the expectation of providing the desired improved electrochemical characteristics of MEA, as taught by Cadaval Fernandez De Leceta et al.

It is held that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant porosity gradient/porosity parameters (including those of claimed invention) in the cited prior art through routine experimentation depending on particular use of a final product in the absence of showing of criticality.

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3. Claims 1-3, 5-9, 11-12, 14, 24-27, 29, and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asukabe et al (US 6,335,112) in view of Wessel et al, further in view of Cadaval Fernandez De Leceta et al.

The cited prior art is applied here for the same reasons as set forth in paragraph 5 of the Office Action mailed on 2/16/2007. Wessel et al are applied here for the same reasons as above.

The cited prior art fails to teach that the additive coating layer has porosity of less than or equal to 20 % (Claims 1 and 25).

Cadaval Fernandez De Leceta et al are applied here for the same reasons as above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed electrode of the cited prior art having coating of peroxide decomposition catalyst with porosity that decreases in the direction of cation-exchange membrane (MEA) with a porosity gradient of 5-15% per 1 micron with the expectation of providing the desired improved electrochemical characteristics of MEA, as taught by Cadaval Fernandez De Leceta et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant porosity gradient/porosity parameters (including those of claimed invention) in the cited prior art through routine experimentation depending on particular use of a final product in the absence of showing of criticality.

4. Claims 1-3, 5-9, 11-12, 14, 24-27, 29, and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Menjak et al (US 20030059664) in view of Wessel et al, further in view of Cadaval Fernandez De Leceta et al.

Menjak et al are applied here for the same reasons as set forth in paragraph 5 of the Office Action mailed on 2/16/2007. Wessel et al are applied here for the same reasons as above.

The cited prior art fails to teach that the additive coating layer has porosity of less than or equal to 20 % (Claims 1 and 25).

Cadaval Fernandez De Leceta et al are applied here for the same reasons as above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed electrode of the cited prior art having coating of peroxide decomposition catalyst with porosity that decreases in the direction of cation-exchange membrane (MEA) with a porosity gradient of 5-15% per 1 micron with the expectation of providing the desired improved electrochemical characteristics of MEA, as taught by Cadaval Fernandez De Leceta et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant porosity gradient/porosity parameters (including those of claimed invention) in the cited prior art through routine experimentation depending on particular use of a final product in the absence of showing of criticality.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wessel et al in view of Cadaval Fernandez De Leceta et al/Asukabe et al in view of Wessel et al, further in view of Cadaval Fernandez De Leceta et al/Menjak et al in view of Wessel et al, further in view of Cadaval Fernandez De Leceta et al/, and further in view of Nakawa et al (JP 07024315) for the reasons of record set forth in paragraph 6 of the Office Action mailed on 2/16/2007 and for the reasons discussed above.

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Response to Arguments

6. Applicant's arguments with respect to rejected claims 1-3, 5-12, 14, 24-27, 29, 37 and 38 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-142323. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy, Ph.D.
Primary Examiner
Art Unit 1792

January 2, 2008

ELENA TSOY
PRIMARY EXAMINER
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